



Study of the Sorption Kinetics of Fe (III) by Polyhydroxamic acid Chelating Exchanger Prepared from Polystyrene-Co-Methyl methacrylate

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Received on July 18th and finalized on 30th August

ABSTRACT

The aim of this research is showing the preparation of polystyrene-co-methyl methacrylate which obtained by a free radical initiation process by co-polymerization of methyl methacrylate and styrene using benzoyl peroxide as an initiator at 70°C and 10% ratio of conversion. Conversion of the ester group of the PSCMMA into hydroxamic acid was carried out by treatment of PSCMMA with hydroxyl amine hydrochloride in alkaline medium at (pH=13) using sodium hydroxide. The polyhydroxamic acid was identified by FT-IR spectroscopy: Sorption capacity (q_e) of the metal ion (Fe^{3+}) was determined. This study also shows the effect of initial (pH), temperature and time on the sorption capacity of (Fe^{3+}) by (PHA). Arrhenius and vant Hoff equation models were used to describe the equilibrium sorption isotherms for using different concentrations of (Fe^{3+}) at pH=4 and at 25 °C by polyhydroxamic acid, PHA.

Keywords: Sorption Kinetics of Fe(III), Polyhydroxamic acid, Chelating exchanger.
